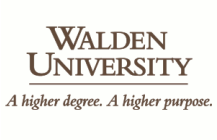

2017

Using Music Intervention to Reduce Anxiety and Agitation for Dementia Residents in Long Term Setting

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2017

Abstract

Using Music Intervention Therapy to Reduce Anxiety and Agitation

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by

Sonia A Brown, RN, MSN

Project Submitted in Partial Fulfillment

of the Requirement for the Degree of

Doctor of Nursing Practice

Walden University

January 2017

Abstract

Dementia is one of the degenerative conditions that present in old age with a decline in cognitive function resulting in changes in personality and the ability to carry out activities of daily living and social functions. Dementia is usually associated with behavioral disturbances that include anxiety and agitation that pose a challenge for family members or caregivers in an alternate home or care-related facility. The purpose of this project was to design and implement a quality improvement program to evaluate music therapy intervention for residents in a long-term care who have dementia. The aim was to evaluate if music therapy was effective in reducing anxiety and agitation in these residents. The Kolcaba theory of comfort was the framework that guided the approach, and the logic model was the tool used to guide the process of program implementation over the period of 1 month. The Rating of Anxiety in Dementia (RAID) and the Cohen Mansfield Agitation Inventory (CMAI-short form) scales were the assessment tools utilized to analyze the collected data. The program was formatted using a cyclic twice-weekly group listening sessions that comprised of 6 participants. Each session lasted 30 minutes that included listening to vocal music of a past genre that should be familiar. A convenience sample of 4 caregivers who routinely cared for the residents used the instruments to document physical and behavioral assessments following the music sessions. The data were analyzed using descriptive analysis and the results suggest that music intervention produced changes in the RAID and CMAI scores for the 6 individuals. The results suggest that music interventions can positively affect the cognitive and functional status of mildly impaired elderly individual, thereby promoting social change.

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Dedication

Words are not enough to express the appreciation, gratitude and love that I have for my beloved friends and family that have supported me on this journey. To the home team, my mom Vernie, Derrick and Melissa, I could not ask for a better cheerleading team. To the fiercest cheerleader, my beloved Melissa, I thank you for the energy and spiritual support you gave me as fuel to keep going when at times my tank was running on empty.

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I would like to express my gratitude to the committee members, Dr. Patricia Schweickert and Dr. Debra Wilson for their guidance and support. To my chairperson, Dr. Corinne Wheeler, I thank you for your mentorship, patience and continuous inspiration in what seemed like an endless journey.

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Section 1: Overview of the Scholarly Project

Introduction

Music as a tool can evoke memories, establish a certain mood resulting in change of behaviors in listeners, and facilitate communication in all age ranges and disease-afflicted individuals. The elderly patient with dementia has shown improvement in cognitive function and positive social interactions when music therapy is implemented as an intervention to in the care regimen (Alzheimer's Association, 2013).

Evidence-based care processes are tools that nurses can use to improve individual patient outcomes or to create practice guidelines to improve outcomes in a group or specific patient population (White & Dudley-Brown, 2012). The abundance of evidence-based research that is available allows practitioners the opportunity to use scientific evidences to formulate practice as opposed to relying solely on practice experiences. Dementia is a disease process that has become a focus of health care due to prevalence in the aging world population, and it has commanded a lot of attention in research. The nursing approach to dementia is diverse in the quest to produce better outcomes in maintaining the best possible quality of life for those afflicted. The American Alzheimer's Association defined dementia as a term that describes a combination of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to effectively participate in activities of daily living (Alzheimer's Association, 2013).

Background

The aging American population has increased in numbers over the past twenty years. Aging adults present with a broad spectrum of physiological and psychological manifestations that warrant attention to optimally facilitate their wellbeing (Alzheimer's Association, 2013). Dementia is associated with a decline in physiological capability which impairs the performance of self-care and therefore requires caregivers' assistance in completion of activities of daily living (Schultz et al., 2004). Cognitive decline is also associated with maladaptive behaviors including social withdrawal, isolation, aggression, anxiety, and agitation. As dementia progresses, the individual's capability to perform routine tasks such as bathing, dressing and undressing, and meal preparation becomes diminished (Veselinova, 2013). As a result, patients with dementia will exhibit decreased communication, increase in social isolation, anxiety, agitation, and depression (Veselinova, 2013). As these symptoms and behaviors become more pronounced, it is imperative that caregivers employ care approaches that limit their occurrence and placate the demented individual. Cohen-Mansfield et al. (2011) noted that music intervention decreases agitation and disruptiveness and serves as a valid treatment for reducing agitation in dementia individuals. Garrison and Davidson (2013) mentioned that during the 1800s the use of music in the treatment of people in asylums was increasingly popular and that caregivers of that time found that music had the ability to soothe even the most disturbed patients.

The American Music Therapy Association (AMTA, 2013) declared that music therapy is the clinical and evidenced-based use of music interventions to accomplish

individualized goals within a therapeutic relationship with a professional. The AMTA (2013) also referenced the *Journal of Music Therapy*, *Music Therapy*, and *Music Therapy Perspectives* as three inter-professional peer reviewed journals that advocate for music interventions as means to address the physical, psycho-social, and emotional needs of individuals.

Problem Statement

Music therapy has provided a source of positive intervention for individuals with altered cognitions (Garrison & Davidson, 2013). There is a multitude of evidence in the scholarly literature that the implementation of this therapy improves the quality of life for dementia-afflicted individuals and their caregivers and family members. Dementia is one of the degenerative conditions that present in old age and cause a decline in cognitive function, resulting in changes in personality and the ability to carry out activities of daily living and social functions (Cook, Moyle, Shum, Harrison, & Murfield, 2010). Dementia is usually associated with behavioral disturbances that include anxiety and agitation that pose challenges for family members or caregivers in an alternate home or care-related facility (Cook, et. al. 2010).

The National Institute of Health (NIH, 2012) reported that 4 to 5 million people in the United States have some degree of dementia. It has projected that this number will increase over the next few decades. The NIH further noted that dementia affects 1% of individuals age 60 to 64 years, and as many as 30 to 50% of people older than 85 years. Vickland et al. (2010) estimated that the occurrence rate of dementia in the population over age 60 was 5.35, which translated to 217,000 cases in 2008. They projected this number to increase to 740,000 (8.6%) in the next 30 years. Veselinova

(2013) mentioned that in 2013 there were over 800,000 people in the U.K. diagnosed with dementia. According to the NIH (2012), dementia is identified as the leading reason for placing elderly people in institutions such as nursing homes and extended residential care facilities. The organization further noted a significant contributing factor for placing these individuals in alternate living settings is caregiver burnout because of the burden of caring and the diverse scope of symptomatic maladaptive behaviors including anxiety and agitation.

The pathophysiology of dementia is brain centered and, depending on the part of the brain affected, the individual presents with varying physiological and psychological manifestations like mood swings, memory impairment, and inability to perform usual activities of daily living (Veselinova, 2013). Sachs (2006) claimed that a primary function of music is its collective and communal nature, and its ability to bring and bind people together. Sachs (2006) also noted that the human auditory and nervous systems are tuned for music, allowing the individual to respond to music favorably in mood. The NIH (2012) has indicated that although music therapy does not represent a treatment of dementia, it carries possible potential benefits for reducing symptoms affecting social, emotional, and cognitive skills, and for decreasing behavioral problems. The NIH noted that music therapy warrants implementation if the individuals' and caregivers' qualities of life can be enhanced.

Purpose Statement

The purpose of this project was to implement a music therapy quality improvement project and evaluate its effectiveness in reducing the occurrences of anxiety and agitation in dementia residents in long-term care.

Nature of the Project

The project was formatted as a program development and evaluation to determine the effectiveness of using group music intervention to reduce anxiety and agitation in dementia-afflicted residents in a long-term care setting. Following patient music therapy sessions, I interviewed a convenience sample of caregivers who routinely provided care to residents with a history of behavioral disturbance including anxiety and agitation.

Definition of Terms

Dementia: An umbrella term to describe problems with cognition, thinking, and memory including the inability to learn new information and recall previously learned information, and the inability to plan, organize, and think in the abstract (Harrison-Dening, 2013).

Agitation: A behavior that is commonly associated with dementia. According to the Cohen-Mansfield Agitation Inventory, agitation is characterized as the presentation of an inappropriate verbal, vocal or motor activity that is not explained by needs or confusion.

Anxiety: A behavior that Cooke et al. (2012) note as commonly associated with the syndrome of dementia. The behavior presents as worry, apprehension, vigilance, motor tension, autonomic hyperactivity, phobias and panic attacks.

Activities of daily living (ADL's): Physical functions that include eating, grooming, dressing and undressing, toileting, transferring, and ambulating.

Music Therapy: Evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship.

Behavioral disturbance/abnormal behavior: Any form of behavior that is inappropriate by an individual or members of a social group.

Long-term care: The continuum of services including nursing, medical, social, and personal care conducted in a variety of settings.

Program implementation: The execution of the music listening sessions followed by the RAID and CMAI short form assessments.

Program evaluation: The systematic assessment of the results of the RAID and CMAI short form scales to determine the effect of the program with the intent of furthering its development and improvement if indicated.

Exclusion criteria: The characteristics that disqualified prospective subjects (documented alcoholic syndrome, paranoia, schizophrenia, and major depression) from inclusion in the study or program.

Inclusion criteria: The characteristics that qualified prospective subjects (diagnosis of dementia, over 65 year's old, residential living for greater than 6 months) for inclusion in the program.

Instruments: Rating of anxiety in Dementia and Cohen-Mansfield Agitation Inventory short form scales to analyze and interpret the findings.

Assumptions

I assumed that the implementation of a music listening therapy program using music of a familiar genre would reduce the level of anxiety and agitation in the dementia-afflicted residents in a long-term care setting. I assumed that the residents

would be a true representation of the desired target population, and that the responses provided to the RAID and CMAI-short form tools would be accurate.

Delimitations

My decision to do a program evaluation rather than a qualitative or quantitative research study research resulted from my curiosity about the topic of music therapy and its use as a tool to potentially impact the quality of life of dementia residents in long-term care facilities. I excluded dementia residents living in the long term care setting for less than 6 months primarily to decrease the potential that their mood and behavior was affected by adaptation to a new environment. I used only the RAID and Cohen-Mansfield Agitation Inventory short form as data analysis tools because these instruments primary relate to assessment of anxiety and agitation respectively, and their relative brevity limited the amount of time and degree of involvement that the facility staff would be required to commit to for involvement in the study, thereby reducing the potential of staff responsibility and overload. I also decided to exclude patients with additional diagnoses of alcoholic syndrome, paranoia, schizophrenia, and major depression in order to narrow the range of health related co-morbidities that could directly affect abnormal behavioral presentations in participants.

Limitations

The small sample size and residential long term care setting were limitations of this music intervention program. Subsequent researchers might address whether the results would be similar if applied to a larger sample size and in a different setting. Another limitation that I identified was that the results of a program evaluation are not

subject to statistical data analysis, and could thus raise questions as to the validity of the results.

Project Objective

My outcome-based objective for this program was to implement music therapy as an intervention tool to reduce the occurrence of agitation and anxiety in dementia residents in a long-term residential setting. Kettner et al. (2013) stated that outcome objectives are the results or statement of the ends or expectations of the program. The time frame to achieve this objective was one month using a cyclic music intervention therapy program. The overarching question guiding the inquiry for this project was, "Can the implementation of a music intervention program reduce the occurrences of anxiety and agitation in dementia residents in a long-term care setting"?

Significance of the Project

The World Health Organization (WHO) mentioned in 2012 that dementia is a global phenomenon (WHO, 2012). With an increasing number of people being affected by dementia, almost everyone knows someone who has dementia or whose life has been touched by it. The WHO reported that the number of people living with dementia worldwide is currently estimated at 35.6 million, and it projected that this number will double by 2030 and triple by 2050. Alzheimer's disease International (2013) also noted that there were an estimated 44.4 million people with dementia worldwide. It projected that this number will increase to an estimated 75.6 million by 2030, and 135.5 million by 2050. These predictions are based on the expected increase in number of dementia cases in developing countries like China, India, South Asia,

and western Pacific regions. These areas already experiencing 62% of people with dementia, but will rise to 71% by 2050. The WHO further emphasized the significance of dementia, noting that the high global prevalence, economic impact on families, caregivers, and communities, and the stigma and social exclusion associated with the disease present a significant public health challenge. The global health community has recognized the need for action and had placed dementia on the public health agenda, which has spurred recent research. Riddera and colleagues reported that nursing home residents with dementia have an increase in agitation and use of psychotropic medication, a decrease in quality of life, and require additional attention from caregivers which increases their burden (Riddera, BrynjulfStigeb, & Gold (2013). The Crisis Prevention Institute (CPI, 2013) addresses the challenges of caring for residents with dementia in long-term care. The CPI reported that in order to prevent or minimize negative behaviors, we must learn to communicate with the individual with dementia and create positive emotional experiences for these patients to help to diminish distress and behavior problems.

Dementia care is an important part of elder care that helps to foster a safe physical environment. Implementation of evidence-based practice is significant to dementia, and can help achieve and sustain good outcomes in patients' altered psychological state. Individuals with dementia that reside in long-term care or residential settings are subject to a variety of interventions in their care regimen that can impact the quality of their lives and produce either positive or negative outcomes. This program evaluation was intended to contribute to the existing body of knowledge

on residential dementia care by providing results on the positive outcomes of reducing anxiety and agitation using music intervention therapy.

Implications for Social Change in Practice

According to Sullivan (2012), there is a lot of social stigma associated with a diagnosis of dementia. The stigma can impact patients and families in terms of early diagnosis and treatment. The World Alzheimer's Report showed that 75% of people with dementia and 64% of caregivers believe that negative associations exist, and many have experienced at least one. They also stated that the impact of negative perceptions and ineffective coping are factors that cause caregivers to socially isolate the family member with dementia and place her or him in an inpatient setting (WHO, 2013). Sullivan (2012) further emphasized that the stigmatization of dementia patients can lead to a socially sanctioned ignorance and unwillingness to deal with the real issues affecting these individuals. The anxiety and agitation accompanying dementia are contributing factors in families' and caregivers' decisions to socially isolate and remove these patients from familiar environments.

Ueda et al. (2013) found that the impairment of condition and change in behaviors are challenges for the caregivers of dementia patients. They also noted that the effect of music therapy as a non-pharmacological intervention for the management of these symptoms remains unclear. Even though the long-term benefits from music intervention are not definitive, the issue warrants attention for addressing the potential benefits that might be realized in the lives of those affected (Ueda et al., 2013). These

benefits include, but are not limited to, increases in social interaction and participation in activities of daily living unless limited by physical impairment, and decreased occurrences of behavioral disturbances. These benefits may decrease the potential for caregiver burnout. The aging population is growing and as a result the number of dementia patients will increase (NIH, 2012). There will thus be an increase in the number of adults that present with impairment in their functional capabilities to perform usual activities of daily living like bathing, feeding, dressing and undressing, and making decisions regarding their daily life routines. In my literature review I found that this phenomenon is accompanied by behavioral disturbances, and that non-traditional intervention like music therapy can reduce the negative behaviors like anxiety and agitation in these individuals (Ziv et al., 2007). This quality improvement program shows how the implementation of a music therapy program can decrease the behavioral disturbances of anxiety and agitation in residents with dementia living in long-term care settings.

Summary

Anxiety and agitation are common behaviors of elderly individuals with dementia. The quality of life of these individuals becomes a challenge, and often places a physical and psychological burden on caregivers at home. Long-term care settings are increasingly the alternate settings where these people will spend the remainder of their lives. Music therapy has become one of the alternate approaches to pharmacologic interventions in the care of these individuals, and it was an integral part of this program evaluation study designed to reduce anxiety and agitation in this population.

Section 2: Review of Literature and Conceptual Framework

Concepts, Models, and Theories

Evidence-based practice is a problem solving approach to clinical practice that emphasizes the use of best evidence in combination with the clinician's experience and patient preferences and values to make decisions about care and treatment. In my review of the scholarly literature, I used the Melnyk and Fineout-Overholt taxonomy as the strategic approach. Melnyk and Fineout-Overholt (2005) defined evidence-based practice as "a problem-solving approach to clinical practice that integrates a systematic search for and critical appraisal of the most relevant evidence to answer a burning clinical question, one's own clinical expertise and patient preferences and values" (p. 28).

I used Kolcaba's theory of comfort as the framework that guided my approach to designing the music therapy quality improvement program. Kolcaba (1994) mentioned that negative tension in an individual occurs when a need is not satisfied or negative obstructive forces outweigh positive influences. Kolcaba et al. (2006) defined three categories of comfort; the state of relief that occurs when a specific comfort need is met, the state of ease which presents as a state of calm or contentment, and the state of transcendence which occurs when one perceives the ability to rise above problems or deal with pain. The underlying principles of this theory, as stated in the three categories, are closely aligned with the overall goal of nursing interventions and can be applied to all practice areas in health care. The conceptual framework of this theory is also suited to my music intervention program for patients with dementia. Kolcaba et al. noted that comfort is enhanced when the patient perceives that the negative tensions

are changed by environmental interventions which result in positive tensions that lead to positive behaviors. In my project, music intervention was the intended positive tension that would evoke states of ease and relief in order to facilitate positive behavior and reduce the anxiety and agitation in these individuals.

Frameworks

I used the logic model to guide the music therapy intervention program. Price, Alkima, & Frank (2009) noted that the logic model serves as a communications tool that graphically represents a program's resources, activities, priority target audiences for change, and anticipated outcomes over a period of time. Kettner et al. (2012) also stated that the purpose of the logic model is to depict the sequence or flow of events in order to identify the resources of the program, match the needs to the resources, activate the process, complete the process, and measure the results. Hodges and Videto (2011) noted that strategic planning involves formulating interventions on how to move and implement the business plan to facilitate success.

The logic model afforded me a visual indication of the progression of the steps involved in plan implementation, and it was an effective strategy to enhance "buy-in" of the stakeholders. The visual clarity of the model enables stakeholders and researchers to conduct ongoing assessments as they implement their plans (Kettner et al., 2013). Kettner et al. (2013) also argued that the logic model allows the planner to see the rational flow of events while applying the designed processes to make positive changes in the lives of patients and reduce the scope of a problem being addressed. This was important to the formative evaluation principle that I built into the design of this study using the RAID and Cohen-Mansfield scales. The RAID scale and the

CMAI short form are additional implementation tools that helped guide the study. These tools accorded with the logic model because I implemented them in timeframes that helped to guide the process, and I used them to analyze the process as it continued. MacPhee (2009) described implementation of the logic model for practice-academic partnerships. The process began when faculty members from several nursing schools became interested in formulating partnerships with similar institutions that shared their concerns on similar issues. The major stakeholders, including the faculty members, nurse leaders, and managers of the clinical facilities, met to formulate a shared goal and plans for moving through the different stages of the model using a collaborative process. During the activities portion of the process model implementation, the nursing school faculty, nursing leadership, and managers would meet routinely at previously agree upon intervals to collaborate in decision making processes, facilitate open lines of communication between the entities as part of the initial objective. MacPhee found that the outcomes were strengthened partnerships between the parties.

During the situation phase of the logic model, I consulted the major stakeholders and presented them with an overview of the phenomena of abnormal behaviors of anxiety and agitation that those dementia residents in long-term care facilities exhibit. The input resource phase of the model facilitated open communication between the team leaders, managers, and unit staff including nurses, nurse's aides, therapists, and restorative and recreational aides regarding their perceptions of the residents' behaviors of anxiety and agitation. This phase also facilitated my assessment of clinical documentation to understand the frequency of

occurrences on the specific dementia unit. The activities phase of the logic model included selecting a room to conduct the music sessions in, and administering the RAID and CMAI survey tools. During this phase, I administered the active music listening sessions followed by the post-intervention assessments using the measurement tools. The output (short- and long-term outcome) phases of the model showed a reduction in occurrences of anxiety and agitation in the study population. I expected that the overall impact of this model would create a social change by decreasing the occurrences of abnormal behaviors in residents with dementia not only in this community, but also in similar communities where this project could be replicated.

Review of the Literature

Methods

I conducted the literature review by using the Walden University library to access the following databases: CINAHL, MEDLINE, Ovid, and PsycINFO. To identify relevant literature, I used search terms including *music therapy, dementia, anxiety, agitation*, and *Alzheimer's disease.* I also used Boolean strings searches including *dementia and agitation, dementia and anxiety, dementia and music, music and behavior, music and anxiety,* and *music and agitation*. The search led me to literature including textbooks, research websites, and over 60 scholarly articles, 38 of which I used for this review. I further streamlined the search by limiting it to articles published in the English, but inclusive of national and international peer reviewed journals. I focused on themes using both specific and general literature. The specific literature addressed the problem of anxiety and agitation in dementia, how it affects

the care of the individual, and how the implementation of music therapy can impact the challenges to care. The general literature addressed the scope of physical challenges and the documented statistics of the elderly that are afflicted, and outlined current and alternative trends to management of the issues.

Relevance to Nursing Practice

Anxiety and agitation are prevalent in individuals with dementia (Mintzer & Brawman-Mintzer, 1996). There is a 38% prevalence rate of anxiety in patients with Alzheimer's-related dementia, compared to 72% in patients with vascular dementia. These patients also have a high physical dependency on caregivers that causes caregiver burnout (Twelftree & Qazi, 2006). Researchers have noted that the prevalence of focusing on the cognitive manifestations of anxiety and agitation in dementia rather than the gradual progression of physical decline, has contributed to the mortality rates of these individuals and caregiver burnouts. Reuben et al. (2013) indicated that many professional healthcare workers, including geriatric physicians, do not have enough care time and have inadequate information in some cases to adequately manage many aspects of dementia, including coordinating social and medical care, instructing caregivers, and counseling families in caring for the dementia patient. As a result, the quality of care for people with dementia is poorer than for older people with other diseases. Reuben et al. also suggested that community-based programs and organizations like the Alzheimer's Association are integral in providing education and support to improve the quality of care for these individuals. The care of these individuals is challenging individually, and is compounded in a group or long-term care setting. The individuals experiencing dementia are sensitive to the

immediate environment, especially where they live, and because of their cognitive impairment are less able to handle uncertainty, even situations that they could previously manage (Dewing, 2010). Dementia patients experience fear and insecurity when they cannot understand what is happening around them, and they express these emotions with agitated behaviors (King, 2012) resulting from altered communication skills, unmet needs, and over- or under-stimulation in their immediate environment (Dewing, 2010).

Anxiety is another manifestation that presents challenges for patients with dementia and their caregivers (Neville & Terri, 2011). Anxiety is more common in patients with dementia when compared to the general population, and it is found to be more prevalent in people with early onset dementia (Hackman et al., 2013). Schultz et al. (2004) found that anxiety is associated with reduced functional abilities in performing activities of daily living, over and above the effects of cognitive decline. These reduced abilities lead to increased health care costs related to housing, staffing to provide safe care, and implementing mechanisms to provide safety and enhance positive behaviors (Twelftreei & Qazi, 2006). It is therefore warranted to incorporate an intervention therapy that reduces the occurrences of anxiety and agitation in these individuals living in long-term settings.

Education of the staff and leadership of residential dementia settings is an integral part of care regimen to produce a positive experience for the staff as well as the individual patient (Nazarko, 2009). She further indicated that the layout of a dementia unit is as essential as the care provided to the residents. A design that reduces background noise like vacuum, staff chatting, deliveries and excessive staff

movement in the view of residents can potentate undue anxiety. Instead, a familiar décor with pictures of family members, home style setting and consistency of caregivers can foster an environment that stimulates a familiar memory and decrease anxiety (Nazarko, 2009). Disruptive behaviors among dementia residents like aggression, screaming and low level functioning in activities of daily living are also correlated with higher formal caregiver burden. (Miyamoto et al., 2010). Staff members that provide practical care of people with dementia in nursing homes have different levels of education, ranging from skilled nurses with specialized training in dementia care to nursing assistants and ancillary personnel without any formal education in health care (Kada et al., 2009) which directly impacts the quality of care and ultimately the outcomes.

The increase in the use of non-traditional approaches to dementia care like music intervention to change presenting behaviors like agitation and anxiety are effective in dementia patients (Cooke et al., 2010). Music therapy is becoming more prevalent in outpatient respite and day care settings community based settings and the value of incorporating these programs to benefit the dementia clients by decreasing their frustration and agitation in the community setting (Kelleher, 2001). The intervention of music intervention in long term settings can be a cost effective and largely noninvasive administrative approach to addressing anxiety and agitation in the residential dementia community. Music therapy can be categorized in two main categories; active and receptive music therapy. Active music therapy is defined as a combination of more than one musical therapy techniques that include active involvement of the participants, such as playing musical instruments, singing, song

drawing, talking or dancing (Vasionyte & Madison, 2013) and implemented mostly for arousal of positive emotions and increasing self-confidence. Receptive music therapy or music listening requires no activity from the participants. Music is selected by the individual or therapist or according to requested or perceived preferences. Participants in this therapy respond to the music verbally by expressing feelings or memories that are aroused and typically implemented for the goal of relaxation and reminiscence music therapy (Vasionyte & Madison, 2013). Music therapy influences the behavior dementia patients and improves the mood and socialization skills of those receiving therapy (Wall & Duffy, 2010). Music is readily available and accepted; it is inexpensive and non-controversial, and has minimal ethical, legal and cultural concerns (Eells, 2014). She further expanded listening to music and/or singing as representing a safe, evidence-based nursing intervention staff should be encouraged to study and use. Effectively structuring music therapy can enhance social and emotional skills, decrease behavioral problems when compared with physical and pharmacological interventions (Aldridge, 2000).

The delivery of music intervention in the dementia patient can be administered in a variety of delivery methods. Music intervention can include individualized or group therapy sessions and can be provided by singing songs listening to music CDs audiotapes and playing instruments (Park & Specht, 2009). Individualized music intervention therapy requires the client to be given a choice and able to determine preference of music which can be challenging for some individuals (Gerdner & Schoenfelder, 2010).

Group therapy interventions administered by listening to background music of a familiar genre while performing another activity like eating, is an effective approach to reduce anxiety and improve the psychological well-being of the dementia patient (Sung et al., 2012). The intimacy in singing results from experiences when individuals were held rocked patted and sung to in earlier years and is interpreted as a source of comfort and relief from stress (Clair, 2000) and is effective during morning hygiene and eating. It is also a highly successful means of reducing levels of agitation, and also offers a sense of gratification to caregivers (Chatterton et al., 2010). In a Taiwanese long term care setting (Chuan, Chang, & Smith, 2011) studied the nursing staff's attitude towards using music therapy for elderly. The results concluded that over 75 percent of the staff had positive attitudes towards music therapy, 72 percent perceived that they had limited knowledge of the how to use the therapy and greater than 50 percent felt they lacked the skills and knowledge and would welcome formal training on how to do so. Raglio et al. (2010) mentioned cyclic music sessions not only reducing maladaptive behavior in dementia residents but enhancing the benefits of the caregivers.

Dementia

Dementia is an umbrella term describing disabilities caused by conditions that affect brain function (Veselinova, 2013). There are different kinds of dementia that make up this syndrome including Alzheimer's dementia and vascular dementia. According to the NIH (2013), Alzheimer's is the most common type of dementia occurring in about 60 to 70 percent of cases. The cardinal feature of Alzheimer's

dementia is gradual onset and progression of episodic memory impairment. The most common symptoms are misplacing items frequently, trouble keeping track of details, becoming repetitive, difficulty multi-tasking, and managing complex tasks such as balancing a checkbook, preparing a holiday meal, or navigating while driving. The distinctive brain abnormality presents as twisted protein bundles that progress to nerve damage and brain death. The NIH further indicated that vascular dementia also known as post-stroke or multi-infarct dementia is the second most common type of dementia, presenting with abnormalities in the vascularity and blood vessels in the brain. In addition, 30% of individuals who have a stroke develop dementia in the 3 months following the infarct and there is a 9-fold increased risk of incident dementia in the subsequent 5–10 years. Patients with vascular dementia will present with either a sudden or a gradual decline with a slow and typically stepwise progression. The risk factors for this form of dementia are hypertension, stroke and transient ischemic attacks. According to Igoumenou and Ebmeier (2012), some of the typical signs and symptoms are gait disturbance, unsteadiness and falls, urinary symptoms that are not explained by urological disease, personality and mood changes. These patients typically do not loose insight until late in the disease and seizures or other manifestations of cerebral ischemic accidents are not infrequent. Vascular dementia is characterized by stepwise deterioration with periods of partial recovery that can last months between periods of deterioration and cognitive decline (Igoumenou and Ebmeier, 2012) Other forms of dementia include Lewy body dementia, Frontotemporal dementia, Korsakoff's syndrome and Creutzfeldt-Jakob Disease. Veselinova (2013) noted predisposing factors to dementia include age, gender,

lifestyle and family history. When dementia has been diagnosed an individualized care plan has to be established to provide the best to care for optimal quality of life (Elkin, 2012). Boyd (2013), stated although dementia is a progressive condition, with no cure, there are medications available that can alleviate some of the symptoms and, in some cases, slow the progression, specifically for Alzheimer's disease. Pharmacological interventions like Acetyl cholinesterase (ACE) inhibitors are recommended for people with mild to moderate dementia, memantine for those with moderate to severe dementia and help to manage some symptoms for a period of time, enabling patients to continue to function as independently as possible for longer. The positive effects of these drugs are not the same for all dementia patients and by all people with dementia, and plateau in effect over time (Elkin, 2012).

The behavioral and physical presentations in a dementia afflicted individual can vary depending on the section of the brain that is primarily affected but generally are all associated with decline in cognitive and physical acuity that also affects behavior and the ability to perform usual activities of daily living (Moran et al., 2013). Sigournel et al. (2008) mentioned that one of the difficulties in addressing in dementia is that symptoms like restlessness, sleeplessness, fatigue and difficulty concentrating overlap in both. They further question whether clinicians can accurately separate general anxiety disorder in a dementia individual. Prince et al. (2013) mentioned that in 2010 there were 35.6 million people globally living with dementia and this number is predicted to double every 20 years, to an expected 115.4 million people in 2050. People living with dementia make up more than half of nursing home residents

(AHCA, 2013) more than 40 percent of residents living in assisted living facilities (Caffrey et al., 2012). The multiplicity of comorbidities that accompany dementia magnifies the challenge of caring for these individuals from a physiological and psychological perspective (Daly & Fahey-McCarthy, 2014). Safety is of great concern in the aging dementia individual (Olsson et al., 2012). Murray (2014) indicated the poor prognosis of the disease condition further poses a significant challenge for the caregivers who in most cases are spouses or children.

The psychological challenge in addition to age- related physical challenges further increases the risk of injuries and puts a burden on caregivers (Elkin & Weatherhead, 2014) to institute safety devices like bed alarms, door alarms and implementing the use of assistive devices to attempt to offset these challenges of wandering and falls (Olsson, 2012). These labor intensive approaches require effective coping skills due to the cognitive and physical impairment and often precede caregiver burnout (Okabayshi et al., 2012).

Sink et al. (2005) stated the traditional use of physical restraints and pharmacological interventions result in harmful effects on the dementia patient, echoed by Mitchell (2013) that as the neurons in the brain degenerate over time the effectiveness of the drugs becomes decreased. The predominance of behavioral disturbances like anxiety and agitation that accompany the dementia patient are commonly treated with antipsychotic medications (Marwijk & Spiegel, 2009) and may not be effective in the treatment of or well tolerated by the patient due to the high prevalence of chronic health issues and increasing drug-to-drug interactions (Marwijk

& Spiegel, 2009). Banerjee (2009) a professor of Mental Health in the UK published the results of a study on the effectiveness of these drugs in dementia care and concluded that there is a limited positive effect on abnormal behavior but can cause significant harm to these individuals heightened by potential for cerebrovascular events. Alternative approaches to the psychological and behavioral manifestations are warranted for management of these individuals who present with anxiety and agitation. The extensive review of the literature has shown music therapy as an effective alternative intervention in the management of anxiety and agitation in the dementia individual.

Local Background and Context

The World Health Organization (WHO) stated in 2012 that the number of people living with dementia was estimated at 35.6 million people and projected that number would double by2030 and triple by 2050 (WHO.int, 2012). The Alzheimer's Association estimated that there are an estimated 5.4 million people currently living in the United States with Alzheimer's and this number is projected to increase to 16 million by 2050. Locally, in 2011, the Florida Department of Elder Affairs stated that there are 500,000 people living with Alzheimer's disease which accounted for 12 percent of the senior population of the state. This number was projected to increase to 580,000 by 2020. Attention to this phenomenon is of great importance due to the global prevalence as well as the physical, social, economic and psychological impact on families due to burden of caregiving for these individuals especially in the late stage of the disease. As a result of the stress of caregiving for these individuals, most families opt for placement in alternate care living communities.

Role of the DNP Student

My role as the DNP in this project was to determine the dementia care facility targeted to implement the project. This facility was part of the institution where I also completed the DNP practicum experience. I also had the role of designing the process and perform the implementation of the music listening sessions as well as instruct the participants on the assessment tools and conduct post implementation interview sessions to collect and analyze the data.

Role of the Project Team

The Project team included the restorative therapy director whose role it was to assist in the participant selection of the primary caregivers of the resident convenience sample. Additionally, the team included 1 nurse and 3 nurses' aides who were direct care providers in the dementia unit routinely on the day shift. The participating team was given a weekly opportunity to provide a general perception of the program as it progressed to offer an opportunity to make any changes in the implementation process towards meeting the objectives.

Section 3: Collection and Analysis of Evidence

Introduction

I designed this as a program development and evaluation project to determine the effectiveness of using group music intervention to reduce anxiety and agitation in residents with dementia in a long-term care setting. The NIH (2012) has found that 4 to 5 million people in the United States have some degree of dementia, and that the number will increase over the next few decades. It further noted that dementia affects 1% of people aged 60 to 64 years and as many as 30 to 50% of people older than 85 years, and is the leading reason elderly people are placed in institutions such as nursing home and extended residential care facilities. Given these statistics, assessing the culture of care in these facilities, the perception of family members caring for these individuals, and the capability of professionals is paramount to enhance the quality of life for all those involved.

Sources of Evidence

Population and Sampling

The music listening sessions included 6 residents over 65 years old. The group was comprised of 5 females and 1 male, and included 1 African American, 1 Hispanic, and 4 Caucasians. Additionally, these residents had a documented diagnoses of dementia based on the approved cognitive exam scale of the Mini Mental Scale Exam (MMSE), and had lived in a residential setting for greater than 6 months. These individuals also had a clinical documentation of behavioral disturbances including anxiety and agitation, as defined in my definition of terms. I excluded residents in the facility who had documented alcoholic syndrome and other uncontrolled acute mental

health comorbidities including paranoia, schizophrenia, and major depression. I conducted the implementation sessions for 30 minutes of the 60-minute timeframe allotted for lunch. The staff participants were a convenient sample of four caregivers who routinely cared for the residents on the dementia unit who participated in the music therapy program. I excluded caregivers who were not regularly assigned to the residents.

Recruitment Strategies

The resident restorative therapy director assisted in participant selection. The participants were comprised of 1 nurse and 3 nurses' aides who were the routine caregivers on the day shift. My primary strategy for recruiting participants was to have the restorative therapy director identify and approach the potential participants to ascertain their willingness to participate in the program.

Data Collection

I received approval for the program and project implementation from the Walden University Institutional Review Board (IRB). Once I obtained IRB approval (# 09-10-15-0066900), I notified the major stakeholders in the practicum facility within a week. I obtained consent from the participant caregivers who were working with the residents of the dementia unit and receiving music intervention therapy. Participants' consent was documented on a written consent form. After I had obtained consent from all participating caregivers, I arranged a follow-up meeting with the facility stakeholders and set a start date of the program. Prior to implementation of the music listening sessions, I instructed the participating caregivers on the RAID and CMAI short form scales to provide them explanation of the tools and knowledge of

what would be assessed and how to accurately score the assessments based on observation of behavioral changes in response to the intervention. Prior to the intervention phase of the music therapy sessions the participants provided initial responses to the RAID and CMAI short form assessment tools based on the behaviors and presentations of the selected residents. This information provided pre-intervention baseline data as a point of reference. During the intervention phase of the program, I directed the residents to the predetermined lunch room and they performed their usual lunchtime procedures. After the residents had been seated in their usual seats and eating had begun, the music was initiated through a CD player and lasted for thirty minutes. The selection of artists included Frank Sinatra and various artists representing the genres of music familiar to the residents from an earlier time in their lives. Following the music listening sessions the residents with dementia resumed their usual daily routine. I collected the responses to the RAID and CMAI scales following the second session in the week every other week. The total approximated time for collection of the response data to both tools was 35 minutes for each resident. Participants usually completed the RAID scale in 10 to 15 minutes and the CMAI short form in 20 minutes for each resident.

Instruments

RAID scale. The RAID is a public domain instrument that includes 18 items, which are divided into 4 sub-groups (worry, apprehension and vigilance, motor tension and autonomic hypersensitivity), and sections for phobias and panic attacks. Professionals working with the patients, rate the items based on the patient's presentation of signs and symptoms during the previous 2 weeks. The scoring system

uses the following rankings for the severity of symptoms: U (unable to evaluate), 1 (mild to intermittent), 2 (moderate), and 3 (severe). A score of 11 or more indicates significant clinical anxiety (Shankar, 1999), with a total potential score of 54. Anxiety scores are not related to sex, age, where the person lived, or the type of dementia, but are associated with physical illness and the preservation of insight (NIH, 2012).

Participants in my study felt that the scale was comprehensive and all the items in the scale were important, thereby confirming that it has good content validity. According to Seignourel et al. (2008), the RAID scale offers the advantage of a comprehensive analysis of anxiety symptoms, but has the disadvantage of possibly requiring the clinician to determine, in case of inconsistencies, which of the caregivers or staff provides the most accurate picture. Shankar et al. (1999) concluded that the RAID scale is a useful clinical and research instrument for assessing anxiety in dementia sufferers.

CMAI scale. Agitation was evaluated using the short form of the CMAI scale. This tool is public domain, internationally recognized, and was developed primarily to research agitated behaviors of the elderly in a nursing home setting (Werner et al., 1994). The model consists of a series of assessments of behavioral presentations, and is usually administered by the researcher to the staff of the facility based on their observation of the participants. The model includes a subjective rating of 29 agitated behaviors. There are four subtypes of agitation: physical and aggressive, physical and non-aggressive, verbal and aggressive and, verbal and non-aggressive that are assessed and measured using a subjective analysis of the patient's behavior. The rating scale for the agitated behaviors is as follows: 1 (never), 2 (less than once a week but still

occurring), 3 (once or twice a week), 4 (several times a week), 5 (once or twice a day), 6 (several times a day), 7 (several times an hour), 8 (would occur if not prevented), and 9 (not applicable; Cohen-Mansfield, 1991). To analyze the score for this scale, it is not useful to calculate or tabulate the numerical responses to each category. It is recommended that the analysis be based on the specific population and the categories of behaviors being analyzed. A comparison of behavioral presentation at intervals will determine if there is a reduction of frequency in occurrences to determine a change in behavior favoring a reduction in agitated behaviors (Cohen-Mansfield, 1991). Guk (2004) also stated that the instrument was valid and reliable for measuring agitated behaviors in the elderly.

Reliability and validity of the instruments. Shankar et al. (1999) offered an analysis of the RAID scale. They found that the kappa values for inter-rater reliability ranged from 0.51 to 1, and for test-retest reliability from 0.53 to 1, which indicates moderate to good reliability. The overall agreement on individual items ranged from 82± 100% (inter-rater) and 84± 100% (test-retest).

Zare et al. (2012) tested the reliability and the validity of the CMAI scale using test-retest, alpha-Cronbach, and splithalf methods that were 0.99, 0.92 and 0.82 respectively. The validity of the questionnaire was investigated by convergent validity, inter-rater agreement across items and exploratory factor analysis. The results from factor analysis of the CMAI using varimax rotation method yielded 4 factors labeled: physical and aggressive, physical and non-aggressive, verbal and aggressive, and verbal and non-aggressive, which explained 72.77% of the total variance. Convergent validity was confirmed by computing a correlation coefficient between the subscales

together and with total scale, which was significant between 0.43 and 0.90 ($p<0.01$). I concluded from analysis that the CMAI tool is a valid and reliable scale to evaluate the agitation in patients with dementia.

Ethical Protection of Participants

The format of the project was a program development and evaluation. I tracked the residents in the group using a numerical assignment that corresponded to their initials for their first and last names. On the consent form, I informed the facility staff that they could withdraw from participation at any time. The numerical assignment system assured that the data collected was associated correctly with each participant for the duration of the process while protecting the residents. I collected the results for the assessment tools in the form of paper questionnaires that I transported in sealed security envelopes. I stored the information in an electronic media format on a portable disc drive that was locked in a personal safe accessible only to me. The information will be stored for at least five years.

Analysis and Synthesis

After each data collection session at the end of every two weeks, 1 assessed the results of the RAID and Cohen Mansfield scale and tabulated the responses to assess the individual change in behavior trends as the program progressed. The results of the assessments were scored using the RAID scoring system for anxiety to determine the trends as it related to the RAID, and behavioral presentations were scored as it related to the CMAI short form scale for agitation. At the end of the program, the numerical values for each participant were collectively evaluated for each scale and then the results for each scale were tabulated. The data was then analyzed using descriptive

analysis of the percentage difference and the mean at three intervals of data collection for each of the resident scores from both the RAID and CMAI-short form scales.

Kettner et al. (2013) stated that the type of evaluation that is done on a program should reflect or answer the question of whether or not the program is meeting or has met the stated objective. The formative evaluation method was utilized. This method was implemented during the actual operation of the program and enabled the program designer to determine if any modifications were indicated to facilitate the outcome objectives. In this case, at the end of each week, a meeting of the participating unit team and stakeholders was held to determine the general perception of the program in terms of quality, efficiency and effectiveness. This afforded the opportunity to foster the staff's ongoing buy-in of the project by the involvement in the different aspects of the program including implementation and evaluation. The decision to have ongoing periodic assessment of the results allowed the stakeholders the opportunity for input on the program to determine if the program was trending towards meeting the objective of the intervention with the opportunity to make changes as the program progressed.

Kettner and colleagues noted the primary purpose of a program evaluation is to provide feedback on the results, identify the accomplishments and to inform stakeholders of the effectiveness and appropriates of the intervention as a change agent. The impact evaluation of the data will include the results of the RAID and Cohen-Mansfield scales to determine the trend in results in each individual's RAID and Cohen Mansfield scores at the completion of program after the four weeks

duration. Shankar et al. (1999) concluded that the RAID scale is a useful clinical and research instrument for assessing anxiety in dementia sufferers. A decrease in the anxiety and agitation scores would indicate that the program objectives were met as it directly relates to the dementia residents in a long term care setting.

In addition to the evaluation of the data, an outcome evaluation of the program itself was assessed after completion of the music intervention therapy. These evaluations included getting the perception of the stakeholders via interview process on the logistics of the program; how the program was designed, developed and implemented. It also served as an opportunity to answer the question on the potential impact of the program on caregivers, families, and the population of dementia residents especially those living in long term care facilities. The most important question to answer was whether the program represented credibility on the subject and had the ability to be easily replicated in other communities. The outcome evaluation process also assessed the strengths and weakness of the project and offered opportunities for improvement for future design and implementation.

Summary

The phenomenon of dementia is a current occurrence and more prevalent in today's society than ever before. It was the objective of this program to determine if a group music intervention in a long term setting could reduce the level of agitation and anxiety that the dementia residents exhibit. This author presumed that the non-pharmacological approach of music intervention was a less threatening approach to the dementia residents as well as the caregivers in the long term care facilities. It was the

ultimate goal that the implementation of the program would make a difference in the long term facility caring for the dementia residents. The expectation was that if the individual residents demonstrate a reduction in the level of anxiety and agitation through music intervention, the safety and quality of life of these individuals in the long term care setting will be enhanced. If the intervention of music is beneficial in reducing the anxiety and agitation in these residents, then this author would propose to the stakeholders that the program become a permanent part of the therapy of these residents to produce ongoing positive effects.

Section 4 of this paper will present the results of the project, the implications to practice and strength and limitations of the project, as well as proposal for recommendations to address the gap in practice. Section 5 will present an analysis of self and plan to disseminate the project.

Section 4: Findings and Recommendations

Introduction

Dementia is one of the degenerative conditions that presents in old age with a decline in cognitive function that results in changes in personality and the ability to carry out activities of daily living and social functions. The WHO noted in 2012 that the number of people currently living with dementia was 35.6 million, and is projected to double by 2030 and triple by 2050. This projection gives credence to the importance of paying attention to what will become a global health issue, and undoubtedly a financial burden on global economies. Dementia is usually associated with behavioral disturbances that include anxiety and agitation that pose a challenge for family members providing care at home, and for caregivers in an alternate home or care-related facility. My goal for this project was to design and implement a quality improvement program that would assess music intervention as a non-traditional approach to managing anxiety and agitation in individuals with dementia. This program would evaluate residents in a long term setting to determine if there was a decrease in their presentations of anxiety and agitation after music therapy. I conducted a review of literature to establish a framework of evidence related to the subject matter.

In the review of literature I conducted thematic searches in the CINAHL, MEDLINE, Ovid, and PsychINFO databases using the terms *anxiety, dementia, music therapy, agitation,* and *Alzheimer's disease*. Results included references to over 60 sources including English language textbooks, and national and international scholarly peer-reviewed journal articles. The strategies that I used to analyze the information

included the RAID scale and the CMAI-short form tool. I used the logic model and Kolcaba's theory of comfort as the frameworks that guided the program development and implementation.

Findings

The logic model was effective in providing a step by step process for implementing the program, and it allowed me to provide the facility stakeholders clarity regarding the stages of the plan including resources, the music listening activities, the desired residents, and the anticipated outcomes over the planned period of time (See Appendix D for the logic model used in this study). The facility stakeholders also expressed appreciation for my use of the formative evaluation process. It was important to them that they were afforded input in the implementation process as it occurred. The music intervention sessions held during mealtime were perceived by the facility staff and stakeholders as providing an environment of positive influence that supported the principle of the Kolcaba theory of comfort which holds that a comfort need is met in a state of ease and contentment (Kolcaba et al., 2006). It was interesting to note how engaged the residents were during the intervention sessions with smiling, nodding, clapping, feet tapping, chair dancing and singing along when the music was played.

After attrition due to incomplete data, I obtained six sets of complete data representing measurements of the RAID and CMAI scores for six eligible residents over three time periods. For each resident there were pre-intervention baseline RAID and CAMI scores with follow-up scores at 13 days and 27 days post-intervention (Tables 1 and 2).

Table 1

Raw RAID Scores from Three Intervals

Residents	Pre-Intervention October 9, 2015	Assessment 1 October 22, 2015	Assessment 2 November 5, 2015
ST-001	13	10	5
RN-002	20	18	12
RG-003	18	16	13
SW-004	24	19	13
GG-005	12	10	7
WA-006	12	11	3
Mean	16.5	14	8.8

Note. Results of the RAID Assessment from October 9 to November 5, 2015.

Table 2

Raw CMAI-Short Form Scores From Three Intervals

Residents	Pre-Intervention October 9, 2015	Assessment 1 October 22, 2015	Assessment 2 November 5, 2015
ST-001	34	30	17
RN-002	51	47	44
RG-003	51	42	36
SW-004	58	53	41
GG-005	52	47	36
WA-006	29	28	18
Mean	45.8	41.2	32

Note. Results of the CMAI-short form assessment from October 9 to November5, 2015.

I analyzed the data from the RAID and CMAI-short form scores using descriptive analyses that assessed the mean and percentage difference for each resident score at three different intervals. The intervals for comparison using both assessment tools were pre-intervention to Assessment 1, pre-intervention to Assessment 2, and Assessment 1 to Assessment 2. For both the RAID and CMAI-short form score sets for each individual resident, the pre-intervention to Assessment 2 intervals showed the largest percentage difference in the scores. The percentage difference for the RAID scores in the pre-intervention to Assessment 2 ranged from 28.3% to 61.5% increases (Table 3). The difference of CMAI-short form scores for each resident for the pre-

intervention to Assessment 2 ranged from 14.2% to 50.0% (Table 4). Accordingly, the change in the percentage indicates the positive difference in the behavior scores, and shows the largest decrease in anxiety and agitation scores when comparison is made between the scores of the pre-intervention to Assessment 2. Inversely the smallest percentage difference for each individual resident was in the interval between Assessment 1 and 2 for both the RAID and CMAI-short form score sets, indicating the smallest percentage change in or reduction in anxiety and agitation.

Table 3

RAID Scores Descriptive Percentage Difference at Three Intervals

Residents	PreInt-Assess1 (% difference)	PreInt-Assess2 (% difference)	Assess1-Assess2 (% difference)
ST-001	23.0	61.5	50.0
RN-002	10.1	40.2	33.3
RG-003	12.3	28.3	18.1
SW-004	21.4	46.0	31.2
GG-005	16.1	42.1	30.2
WA-006	8.0	75.1	67.2

Table 4

CMAI-Short Form Scores Descriptive Percentage Difference at Three Intervals

Residents	PreInt-Assess1 (% difference)	PreInt-Assess2 (% difference)	Assess1-Assess2 (% difference)
ST-001	12.1	50.0	43.0
RN-002	7.7	14.2	6.4
RG-003	17.7	29.4	14.3
SW-004	9.4	29.3	22.6
GG-005	9.6	30.7	23.4
WA-006	3.4	37.9	35.7

Discussion

Given the small sample size and relatively short time intervals over which testing occurred, these results must be seen as preliminary. However, the data indicates that the music intervention produced significant changes in both the RAID and CMAI scores for the six studied individuals. The changes were all in the predicted direction of reduction of scores. In general, these results confirm that music interventions can positively affect the cognitive and functional status of mildly impaired elderly subjects. They indicate that even simple music exposure can assist in orienting mildly demented elderly persons and improving their overall function.

Unanticipated Limitation

The unanticipated limitation in the project was the size of the convenient sample that was present for all of the eight intervention sessions. Even though I had identified 10 residents as meeting the inclusion criteria for the program, four of the residents were unable to be present for at least one of the eight group music listening

sessions. The reasons for this included patient requests to have lunch in their room and physical illness. The small sample size could potentially impact the findings by potentially not being a true representation of the target population (Wall & Duffy, 2010).

Implications for Practice

The decrease in the occurrences of anxiety and agitation presented in the subject residents over the course of the implementation process suggests that group music intervention as applied in this program had a positive outcome on the individuals that were participants in the project. Further testing would include a larger sample, perhaps with gradations in initial RAID and CMAI scores and longer intervention times, as well as a control group of equivalent participants not exposed to the music intervention. This finding is a positive implication for caregivers of the local facility and if replicated in other institutions, communities and systems could have not only a local but also a global impact in improving the quality of lives of dementia residents living in long term residential facilities.

Implications for Social Change

Alzheimer's disease International mentioned in 2013 mentioned that the 44.4 million people living with dementia worldwide is estimated to increase to 75.6 million by 2030 and 135.5 million in 2050. The National Institute of Health (NIH) stated in 2012 that anxiety and agitation are usually a contributing factor to family caregiver burnout that results in placement of dementia afflicted individuals in residential settings. Consequently, there are challenges in the facilities in managing the maladaptive behaviors. Music therapy as a non -pharmacological intervention was

beneficial in enhancing the quality of life of the residential dementia patients with anxiety in agitation. The results of the extensive literature review and the outcomes of this program suggests that implementation of music therapy in dementia units and other residential facilities can have a positive impact in decreasing anxiety and agitation in dementia residents. Stakeholders, Administrators and nursing staff could propel the implementation of music intervention to effect social change and ultimately as a standard of practice in dementia care.

Recommendations

The sample was drawn from a residential setting and may not easily extend to persons living in home or independent settings. It is possible that the independent assessors were affected by the un-blinded nature of this preliminary study. Further study should include a larger sample, perhaps with gradations in initial RAID and CMAI scores and longer intervention times and duration of program, as well as a control group of equivalent subjects not exposed to the music intervention. Future implementation of this program could also focus on assessing the staff participants' preconceived beliefs and attitudes towards the usefulness of music therapy.

Strengths and Limitations of the Project

Strengths

The low cost to implement the program was an identified strength of this project. The cost incurred by me was for purchase of a portable CD player and CD's for the listening sessions. There was no cost associated with productivity time for the caregiver participants of the facility since the implementation was incorporated into the employees paid time as well as no risk to the residents participating in the study.

Another identified strength of the project was the ease of implementation. The project was conducted in one facility which afforded open communication and accessibility with the stakeholders.

Limitations

One of the primary limitations identified was the format of the project. Quality improvement studies are important to evaluate process outcomes but do not meet the research methodology requirements. These studies usually apply the results of research into practice as opposed to research formatted studies which usually develop new interventions to be applied to practice. Another limitation was that the project was implemented in one location which could potentially challenge the applicability to other organizations as opposed to a project that involved similar multiple organizational settings. The small convenience sample size could also challenge the potential for a true representation of the targeted population. The final limitation identified in the project was the limited amount of documented research in the extensive review of the literature showing a combined use of the RAID and CMAI assessment tools to assess anxiety and agitation respectfully, using music intervention in dementia.

Section 5: Dissemination Plan

I will present the scholarly product in the form of an oral project summary and evaluation report. The report will be supplemented by a postcard that depicts the stages of development and implementation of the program using the logic model (see Appendix D) as a guideline for the postcard. A copy of the RAID scale (Appendix E) and the CMAI-short form scale (see Appendix F) will also be provided as references for the assessment tools I used. The target audiences for dissemination of the product include foundations, organizations, and stakeholders of dementia residential care facilities. These audiences may also include stakeholders associated with dementia and geriatric scholarly journals and publications, ideally in an open conference setting.

Analysis of Self

The process involved in developing and implementing this program has enlightened me to the multifaceted obligations of an advanced-practice nursing scholar. As a primary practitioner in academia, I gained insight into the clinical and non-clinical roles that contribute to the ongoing daily clinical management of dementia residents. I gained a renewed appreciation for the balance that is required to negotiate pharmacological as well as non-pharmacological approaches to the management of the complex process of dementia. This project has fostered my professional growth by helping me realize the AACN *Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking*. (AACN, 2012). This essential states that DNP graduates must be proficient in quality improvement strategies and in creating and sustaining changes at the organizational and policy levels.

As a scholar, I have developed my ability to research current scholarly literature that is relevant to the subject matter of dementia, and improve on my scholarly writing practices in order to communicate in a clear and concise manner beneficial to the target audience. As a project manager, I learned the importance of creating a strategic plan that was clearly outlined in a step-by-step approach and using a scholarly model that would fit the project implementation based on the proposed goal of the project. Throughout the journey of planning and implementing this capstone project, I have developed into a scholar practitioner with the ability I displayed in conceptualizing a music intervention project for dementia residents in a long-term care setting. My ability to review the relevant and current literature using an evidenced-based approach and to choose a suitable model and theory as a framework for the program has marked my growth through this process. The positive response from the facility staff and the improved behavioral outcomes of the participants have further motivated my long-term professional goal of sharing the outcomes of this project to a wider audience through publishing, and facilitating replication of the program in similar dementia residential communities.

The journey towards completion of the project included some challenges that were intrinsic to the implementation of the music therapy sessions. The staff of the dementia unit played a pivotal role in ensuring that the participants were present in the dining room for the sessions, some of whom were resistant to leaving their rooms, even for meals. On two occasions when this occurred, the solution was to delay the start time of the music listening session. It was important not to coerce or force the participants into the dining room in order to prevent or provoke an exaggerated

response that could be manifested in exaggerated anxiety or agitation. This experience validated the importance of the DNP-prepared scholar to be able to evaluate delivery of care approaches based on a specific patient population to effect social change and produce a better quality of life.

Summary

Dementia is a cognitive degenerative process that results in changes in personality and behaviors that include agitation and anxiety. My goal in this project was to implement and evaluate a group music intervention program to assess a potential decrease in anxiety and agitated behaviors in the participant group of residents in a long-term residential care setting. The project entailed planning, developing, implementing and evaluating the music therapy program. I used the RAID scale to evaluate anxiety and the CMAI short form to assess agitation. Music intervention has been shown to decrease the occurrences of anxiety and agitation in individuals with dementia residing in long-term care settings.

A successful quality improvement program provides a framework for evaluating outcomes in practice. I implemented this program to determine the efficacy of music therapy for reducing anxiety and agitation in residents with dementia in a residential long-term setting. The success of the program was not only realized in the objective assessment of the responses from the assessment tools, but also was supported by the positive feedback from the stakeholders of the facility. The results of this program evaluation are beneficial to family members and caregivers of individuals with dementia. Foundations and organizations with a vested interest in the care and improvement of quality of life for the dementia-afflicted are the audiences that would

be appropriate for dissemination of the results of this project. The adaptation and implementation of evidenced-based practices and a theoretical framework of reference was paramount in achieving the results and positive outcomes of this project. The results of this program have contributed to the body of knowledge and provided a framework for reducing anxiety and agitation in residents with dementia who live in long-term care settings.

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Appendix A: Letter of Cooperation

Letter of Cooperation

September 18, 2015

Dear Sonia Brown,

We are pleased to work with you in your capacity as a volunteer who will be providing music intervention listening twice weekly in 30 minute sessions as part of our organization's operations for a duration of one month.

We agree to Sonia Brown inviting caregivers to participate in the evaluation of a music therapy program administered to the residents of our facility by completing observations and assessments regarding the residents' anxiety/agitation during paid time. Ms. Brown is authorized to instruct the caregivers about observation assessments required to complete the Rating for Anxiety in Dementia (RAID) and Cohen Mansfield Agitation Inventory (CMAI) data collection instruments. The facility caregivers participation will be voluntary and at their own discretion. Music therapy is an established program currently being provided by staff to our residents, therefore consent for caregivers to conduct observations/ assessments is not required by our residents.

We agree to provide supervise and assume responsibility for these activities within the scope of our regular operations during the mealtime sessions for the dementia residents, in the dining area. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Baldo 9/18/15

Adela Baldo
561)471-5566

Appendix B: Informed Consent

CONSENT FORM

All caregivers at this facility are invited to take part in data collection to help evaluate a music therapy program for the dementia residents in long term care.

This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

Sonia Brown, RN, is a researcher who is inviting caregivers on the dementia unit to volunteer to participate in the data collection for this program evaluation project. You may already know her from her role as a practicum student from Walden University but this is separate from that role.

Background Information:

The purpose of this program is to determine if there is a change in behaviors of anxiety and agitation in dementia residents in long term care when music therapy is implemented.

Procedures:

If you agree to participate in this study, you will be asked to:

- During a four-week time period, observe residents who have dementia and are receiving music therapy. Observations will occur twice weekly during the 30 minutes music listening sessions conducted by the facility during lunchtime in the dining area.
- Provide responses to questions based on observation of resident behaviors for a baseline observation data and following the second session every 2 weeks during paid time (initial baseline and once every 2 weeks equaling a total of 3 times).

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to participate in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue, stress or becoming upset. Participating in this study would not pose risk to your safety or wellbeing.

Financial responsibility /Compensation: None.

Privacy:

Any information you provide will be kept confidential. Your name or anything else that could identify you or residents will also be kept confidential. Data will be kept secure by Sonia Brown, RN. The information will be collected initially on paper and then transferred and stored electronically on a portable disc and locked in a personal safe for at least five years.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact Sonia Brown via phone (561) xxx-xxxx. You will receive a copy of this consent form to keep for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I understand that I am agreeing to the terms described above.

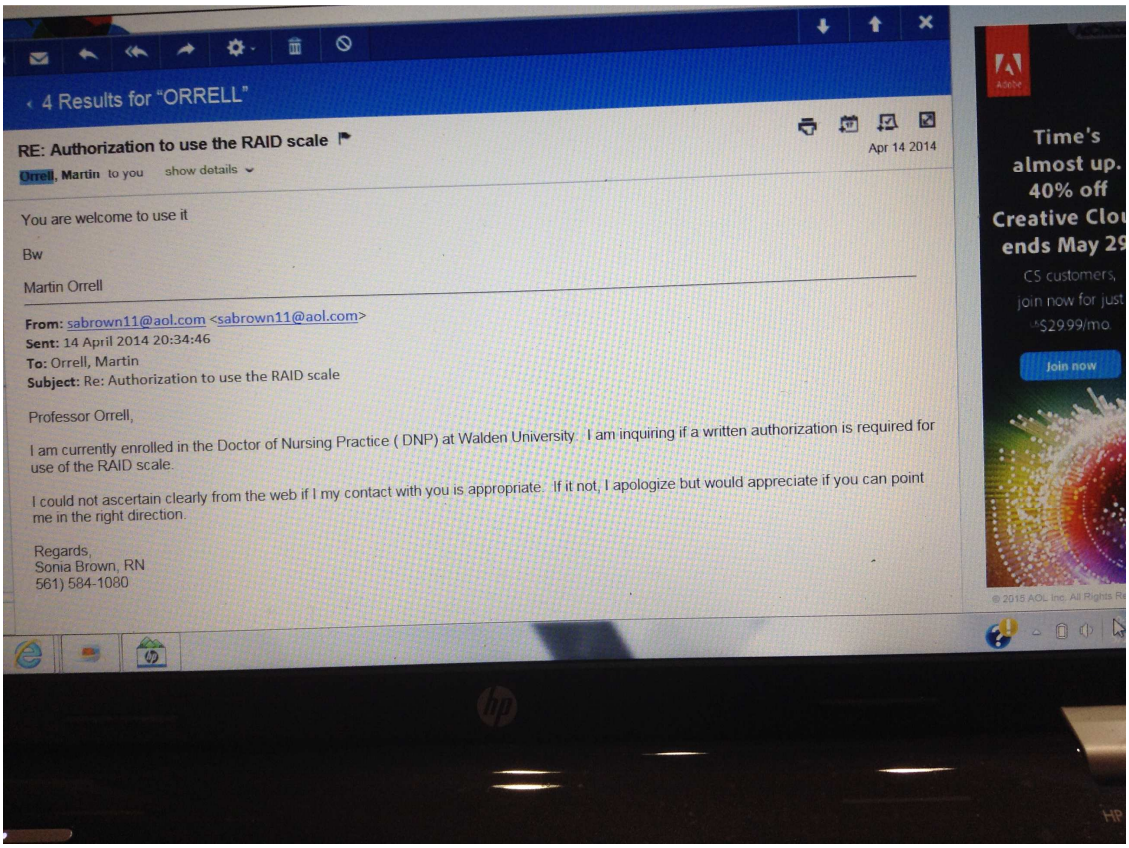
Facility Participant Name _____

Facility Participant Signature _____

Researcher Signature _____

Date of Consent _____

Appendix C: Permission to Use RAID Scale



Appendix D: Logic Model

Situation: Dementia is associated with behavioral disturbances including anxiety and agitation that pose a challenge for family members or caregivers in an alternate home or care-related facility

INPUTS	OUTPUTS	OUTCOMES

	Activities	Participants	Short Term	Medium Term	Long Term
-Administrator time -Restorative therapy director -Dementia unit staff time -Assistant DON -Nurses -CNA's -Music selection of familiar genre	-Develop and implement group music intervention program that includes: -Educate staff participants on RAID and CMAI (short form) tools -Collect baseline data using RAID and CMAI (short form) -Group music listening twice weekly for 30 minutes over a one month period -Collect data every 2 weeks	-Dementia unit resident subjects -Direct caregivers of the selected residents	-Decrease in anxiety and agitation behaviors in the selected residents	Implementation of music therapy as non-pharmacological intervention to reduce anxiety and agitation in dementia residents in long term care	Replication of music therapy program in settings locally, (South Florida) Nationally and globally to reduce anxiety and agitation in dementia residents in long term care.

Fig. 1: LOGIC MODEL: Music Intervention Program Implementation and Evaluation for anxious and agitated dementia residents in long term residential setting

Appendix E: RAID Scale

Rating for Anxiety in Dementia (RAID) (Shankar et al 1999)

Patient's Name: **Date Of Birth**: **Male/Female**:

Rater's Name: **Occupation**: **Date:**

Patient's Status at Evaluation:

1. Inpatient **2**. Outpatient **3**. Day hospital/day center patient **4**. Other (specify) .....

Scoring System:

U=unable to evaluate, **0**=absent **1**= mild or intermittent **2**=moderate **3**=severe

Rating should be based on symptoms and signs occurring during two weeks prior to the interview.

The items are rated after interviewing the patient, care/ward staff and checking clinical notes.

No score should be given if symptoms result from physical disability or illness.

Total score is the sum of the items 1 to 18.

A score of 11 or more suggests significant clinical anxiety.

RAID SCORE

Worry	1.	Worry about Physical Health.	
	2.	Worry about cognitive performance (failing memory, getting lost when goes out, not able to following conversation.)	
	3.	Worry over finances, family problems, physical health of relatives.	

	4.	Worry associated with false belief and/or perception.	
	5.	Worry over trifles (repeatedly calling for attention over trivial matters)	
Apprehension and Vigilance	6.	Frightened and Anxious (keyed up and on the edge)	
	7.	Sensitivity to noise (exaggerated startle response)	
	8.	Sleep disturbance (trouble falling or staying asleep.)	
	9.	Irritability (more easily annoyed then usual, short tempered and angry outbursts)	
Motor Tension	10.	Trembling	
	11.	Motor Tensions (complain of headache, other body aches and pains.)	
	12.	Restlessness (Fidgeting, cannot sit still, pacing, wringing hands, picking clothes)	
	13.	Fatigueability, tiredness	
Autonomic Hypersensitivity	14.	Palpitations (complaining of heart racing or thumping)	
	15.	Dry mouth (not due to medications), Sinking feeling in stomach.	
	16.	Hyperventilating, shortness of breath (even when not exerting)	
	17.	Dizziness or light-headedness (complains as if going to faint)	
	18.	Sweating, flushes or chills, tingling or numbness of fingers and toes.	
Phobias: (fears which are excessive, that do not make sense and tend to avoid- like afraid of crowds, going out alone, being in a small room, or being frightened of some kind of animal or heights, etc.) *Describe*			

Panic Attacks: (feelings of anxiety or dread that are so strong that think they are going to die or have a heart attack and they simply have to do something to stop them, like immediately leaving the place, phoning relatives etc.) *Describe*	

Appendix F: CMAI Short Form Scale

THE COHEN-MANSFIELD AGITATION INVENTORY - short form

Please read each of the agitated behaviors, and check how often (from 1-5) they were manifested by the participant over the last 2 weeks; if more than one occurred within a group, add the occurrences, e.g., if hitting occurred on 3 days a week, and kicking occurred on 4 days a week, 3 + 4 = 7 days; circle 4, once or several times a day.

	Never 1	Less than once a week 2	Once or several times a week 3	Once or several times a day 4	A few times an hour or continuous for half an hour or more 5
1. Cursing or verbal aggression	1	2	3	4	5
2. Hitting (including self), Kicking, Pushing, Biting, Scratching, Aggressive Spitting (include at meals)	1	2	3	4	5
3. Grabbing onto people, Throwing things, Tearing things or destroying property	1	2	3	4	5
4. Other aggressive behaviors or self abuse including: Intentional falling, Making verbal or physical sexual advances, Eating/drinking/ chewing inappropriate substances, Hurt self or other	1	2	3	4	5
5. Pace, aimless wandering, Trying to get to a different place (e.g., out of the room, building)	1	2	3	4	5
6. General restlessness, Performing repetitious mannerisms, tapping, strange movements	1	2	3	4	5
7. Inappropriate dress or disrobing	1	2	3	4	5
8. Handling things inappropriately	1	2	3	4	5
9. Constant request for attention or help	1	2	3	4	5

	Never 1	Less than once a week 2	Once or several times a week 3	Once or several times a day 4	A few times an hour or continuous for half an hour or more 5
10. Repetitive sentences, calls, questions or words	1	2	3	4	5
11. Complaining, Negativism, Refusal to follow directions	1	2	3	4	5
12. Strange noises, (weird laughter or crying)	1	2	3	4	5
13. Hiding things, Hoarding things	1	2	3	4	5
14. Screaming	1	2	3	4	5